

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-009195**Date Inspected:** 22-Sep-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1500**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Steve Barnett**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge-K Components**Summary of Items Observed:**

Summary of Items Observed: On this date, Caltrans Quality Assurance Inspector (QA) Clete Henke was present at Oregon Iron Works, Inc. (OIW) in Clackamas, OR for observation of fabrication of the Hinge K Pipe Beams and related activities including in process welding and OIW Quality Control (QC) visual and nondestructive testing. The following observations were recorded:

OIW Fabrication Shop-Bay 3**Hinge-K Pipe Beam Base Assembly 102A-2:**

a111-2 forging to a110-2 base plate

The QA Inspector intermittently monitored OIW welders Phuong Huynh (WID H4) and Yuriy Bannikov (WID B61) as they engaged in grinding at interior weld terminations in an attempt to achieve a 2:1 transition at these locations. Welders H4 & B61 were engaged in this activity for the duration of the shift.

Hinge-K Pipe Beam Base Assembly 102A-3:

a111-3 forging to a110-3 base plate

The QA Inspector was contacted by OIW Quality Control Inspector Steve Barnett and informed that three areas on a111-3 forging where base material indications had been previously excavated had undergone Magnetic Particle Testing (MT) on the prepared surface as required by approved Welding Repair Report (WRR-28). Mr. Barnett further stated that he had verified required pre-heat and that welding was set to begin at the referenced locations near weld joints W1-142/143, W1-146/147, & W1-148/149 which respectively join c107, e108 & d108 radial stiffeners to a111-3 forging. OIW welder Mikhail Bannikov (B28) subsequently initiated welding at prepared excavations utilizing Flux Cored Arc Welding (FCAW) and approved Welding Procedure Specification (WPS)

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3048. Welder B28 performed FCAW in the vertical (3G) position and maintained continuous preheat utilizing a torch. Mr. Barnett was observed regularly monitoring and recording the in process FCAW parameters for the duration of the repair welding. The QA Inspector also intermittently observed in process welding parameters and determined that the FCAW parameters and minimum preheat/interpass temperature appeared to be in general compliance with the contract requirements -- (25 volts, 225 amperes, 178mm/min travel speed). The QA Inspector verified that specified two hour post-heat of 230°C to 315°C was achieved and maintained at each location. The repair welding described above was completed without incident and appeared to be in general compliance with approved Welding Repair Report (WRR) and contract requirements.

OIW Fabrication Shop-Bay 6

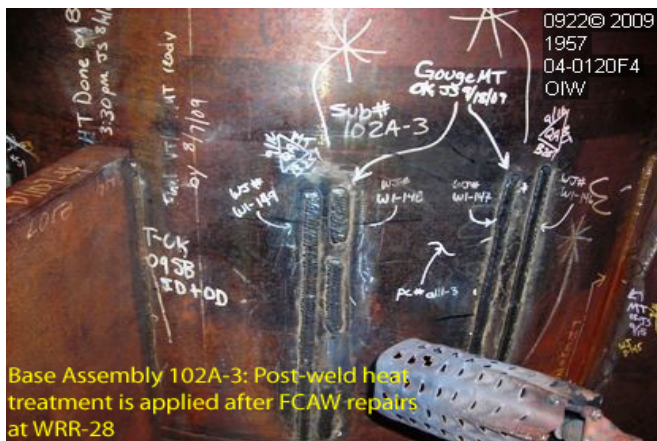
Hinge-K Pipe Beam Fuse Assembly 120A-6:

a124-9 to a124-1

The QA Inspector was contacted upon arrival by OIW QC Inspector Steve Barnett and notified that automatic electro slag welding (ESW) overlay process was about to be initiated on assembly 120A-6. OIW qualified welder Bounheune Savanh (WID S74) was subsequently observed during in-process welding of Soudotape 309L stainless steel overlay to hinge k pipe beam fuse sub-assembly 120A-6. The weld joint is identified as 309L 1st layer. Mr. Savanh was observed welding in the flat position utilizing automatic ESW overlay process with a .5mm x 60mm Soudotape 309L stainless electrode, filler metal brand Soudotape class EQ309L automatic. An OIW helper was observed assisting welder S74 during ESW activity. The QA Inspector observed OIW QC Inspector Steve Barnett regularly monitoring and recording the in process ESW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the ESW parameters (1200 amps, 25.4 volts, 267mm/min travel speed) and minimum preheat temperature of 225° F appeared to be in general compliance with the contract requirements and approved OIW Welding Procedure Specification (WPS) 7003.

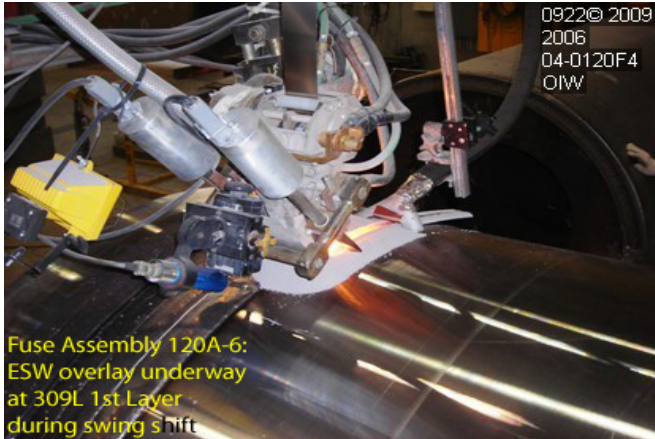
Material, Equipment, and Labor Tracking:

The QA Inspector performed verification of personnel involved with this project and equipment in use. The QA Inspector accounted for 6 OIW production personnel and 2 Quality Control Inspectors present on this date during swing shift.



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Summary of Conversations:

As noted in the body of the report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677 , who represents the Office of Structural Materials for your project.

Inspected By: Henke,Clete

Quality Assurance Inspector

Reviewed By: Adame,Joe

QA Reviewer